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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
JAGANNATHAN, MELANIE	
ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/539,408	TWEEDLY ET AL.	
	Examiner	Art Unit	
	Melanie Jagannathan	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5,6 and 14* is/are allowed.

6)☒ Claim(s) *1-4,7-10,12-13,15-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- Examiner has considered Amendment After Non-Final mailed 10/3/2005.
- Claims 1-10, 12-26 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-4, 7-10, 12-13, 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subbiah et al. US 6,366,961 in view of Westberg US 6.041,054.

Regarding claims 1, 25-26, the claimed aggregating multiple datagrams bound for intermediate switching point into tunnel packet payload, each datagram comprising a voice data payload from a selected voice data stream from which when combined with information from one or more previous datagrams from same voice stream the

datagram's destination point can be derived is disclosed by assembly of mini packets into a single RDP/UDP/IP payload (Figure 3, element 300) where the mini packets (element 310) follow the RTP header and each mini packet (element 320) is delineated by a two byte MINI-IP header (element 312). See column 3 ,lines 26-40, column 6, lines 32-67. This MINI-IP header allows for many users to share a single RTP/UDP/IP connection and includes a CID field, LI field and SN field. Allocating a unique CID identifies a single user, among the number of users. See column 5, lines 5-25, lines 30-64. Mini packets are assembled into RTP payload with other mini packets that are destined for same next hop. See column 7, lines 1-43.

Regarding claims 1-3, 25-26, the claimed encapsulating the tunnel packet payload in an IP datagram for network transport (claim 3) and forwarding the tunnel packet to intermediate switching point, to a destination endpoint or second intermediate switching point (claim 2) is disclosed by calls at a base station (Figure 5, element 52) are assembled into a mini packet a mini packet assembly buffer (element 522) and the mini packets are routed to a radio network controller (element 530) via an UDP connection (element 532). See column 7, lines 3-19.

Regarding claims 1,2,4, 25-26, the claimed deaggregating the tunnel packet payload at intermediate switching point and assigning datagrams to new tunnel packet payloads based on destination endpoint derived from each datagram's header and one or more previous datagram headers from same voice data stream by matching datagram header information to a switching context maintained by intermediate switching point and placing datagram in new tunnel packet payload (claim 4) is

disclosed by receiving RTP payload at intermediate node, performing mini packet switching at mini-packet controller (Figure 4, element 410) in intermediate node (Figure 4, element 430) where mini-packets are disassembled and processed and each packet is grouped with other packets that share the same outgoing UDP connection. RTP payload assembly is carried out at the mini-packet controller and transmitted to next hops, which may be the destination node. See column 6, lines 46-59. The demultiplexing unit Figure 5, element 510) at RNC (element 530) receives RTP payload and disassembling mini packets encapsulated within payload. The control and signaling (element 514) and routing (element 516) modules examine header of mini packet and extracts next hop information and multiplexing unit (element 512) will assemble mini packets destined for the same hop together. See column 7, lines 3-15.

Subbiah discloses assembly of mini packets into payload with mini headers. However, Subbiah does not disclose the claimed each datagram comprising a compressed header-formatted header and decompressing the header. Westberg discloses employing ATM AAL2 minicells for transporting IP data packets where IP packet could be UDP/RTP data packet or TCP packet. Westberg discloses the IP packet (Figure 8, element 800) containing a compressed header (element 805) and a compression and decompression algorithm. See column 5, lines 28-31, lines 44-58, column 6, lines 4-21, column 7, lines 1-17. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Subbiah with compressed IP header of Westberg. One of ordinary skill in the would be motivated to

do this reduce undesirable overhead to enhance bandwidth utilization. See column 5, lines 28-38.

Regarding claim 7, Subbiah et al. discloses all of the limitations of the claims except for tunnel packet encapsulated in one or more ATM cells for transport. Westberg discloses compression of packets with use of AAL2 minicell header. See Figure 9, and columns 5-8. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify mini packet switching system of Subbiah et al. with ATM cells. One of ordinary skill in the art would be motivated to do this for bandwidth efficiency. See column 1, lines 8-42, column 3, and lines 5-15.

Regarding claims 8-9, the claimed receiving inbound tunnel packets, each inbound tunnel packet having the capability to carry a payload comprising multiple tunneled datagrams, each tunneled datagram having a corresponding header that identifies it as belonging to a specified switching context is disclosed by assembly of mini packets into a single RDP/UDP/IP payload (Figure 3, element 300) where the mini packets (element 310) follow the RTP header and each mini packet (element 320) is delineated by a two byte MINI-IP header (element 312). See column 3, lines 26-40, column 6, lines 32-67. This MINI-IP header allows for many users to share a single RTP/UDP/IP connection and includes a CID field, LI field and SN field. Allocating a unique CID identifies a single user, among the number of users. See column 5, lines 5-25, lines 30-64. Mini packets are assembled into RTP payload with other mini packets that are destined for same next hop. See column 7, lines 1-43.

The claimed parsing the payload from an inbound tunnel packet into individual incoming tunneled datagrams, associating individual incoming tunneled datagrams with corresponding switching contexts, mapping associated tunneled datagrams to outbound multiplexes based on destination endpoint indicated in each datagram's associated context state is disclosed by receiving RTP payload at intermediate node, performing mini packet switching at mini-packet controller (Figure 4, element 410) in intermediate node (Figure 4, element 430) where mini-packets are disassembled and processed and each packet is grouped with other packets that share the same outgoing UDP connection. RTP payload assembly is carried out at the mini-packet controller and transmitted to next hops, which may be the destination node. See column 6, lines 46-59. The demultiplexing unit Figure 5, element 510) at RNC (element 530) receives RTP payload and disassembling mini packets encapsulated within payload. The control and signaling (element 514) and routing (element 516) modules examine header of mini packet and extracts next hop information and multiplexing unit (element 512) will assemble mini packets destined for the same hop together. See column 7, lines 3-15.

The claimed updating the header for a tunneled datagram mapped to an outbound multiplex to identify that datagram with a switching context known to outbound multiplex's destination and aggregating tunneled datagrams assigned to common outbound multiplex into outbound tunnel packet payload is disclosed by the demultiplexing unit Figure 5, element 510) at RNC (element 530) receives RTP payload and disassembling mini packets encapsulated within payload. The control and signaling (element 514) and routing (element 516) modules examine header of mini packet and

extracts next hop information and multiplexing unit (element 512) will assemble mini packets destined for the same hop together. See column 7, lines 3-15.

Subbiah discloses assembly of mini packets into payload with mini headers. However, Subbiah does not disclose the claimed each datagram comprising a compressed header-formatted header and decompressing the header. Westberg discloses employing ATM AAL2 minicells for transporting IP data packets where IP packet could be UDP/RTP data packet or TCP packet. Westberg discloses the IP packet (Figure 8, element 800) containing a compressed header (element 805) and a compression and decompression algorithm. See column 5, lines 28-31, lines 44-58, column 6, lines 4-21, column 7, lines 1-17. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Subbiah with compressed IP header of Westberg. One of ordinary skill in the art would be motivated to do this reduce undesirable overhead to enhance bandwidth utilization. See column 5, lines 28-38.

Regarding claims 10,13, 19-22, the claimed multiplex terminator to receive inbound tunnel packet payload and parse the payload into individual incoming tunneled datagrams is disclosed by de-assembler (Figure 5, element 510). See column 7, lines 6-9.

The claimed context memory to store context state for multiple switching contexts is disclosed by CID table used for signaling in mini packet switching system. See column 7, lines 31-42. The claimed context matcher to associate individual incoming tunneled datagrams with corresponding switching contexts in context memory is

disclosed by control and signaling module (element 514) examining header of mini packet and extracting next hop information and CID table is used for signaling for mini packets. See column 7, lines 3-15.

The claimed forwarding engine to map the associated tunneled datagrams to outbound multiplexes based on destination endpoint indicated in each datagram's associated context state, the claimed header updater and multiplexer is disclosed by routing module (element 516) passing next hop information along with mini packet payload to multiplexing unit (element 512) where mini packets will be assembled into an RTP payload with other mini packets that are destined for same next hop. See column 7, lines 3-15.

Subbiah discloses assembly of mini packets into payload with mini headers. However, Subbiah does not disclose the claimed each datagram comprising a compressed header-formatted header and decompressing the header (claim 13), and a tunneler to datagram-encapsulate the outbound tunnel packet payload into a tunnel datagram using a layer two tunneling protocol. Westberg discloses employing ATM AAL2 minicells for transporting IP data packets where IP packet could be UDP/RTP data packet or TCP packet. Westberg discloses the IP packet (Figure 8, element 800) containing a compressed header (element 805) and a compression and decompression algorithm. See column 5, lines 28-31, lines 44-58, column 6, lines 4-21, column 7, lines 1-17. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Subbiah with compressed IP header of Westberg. One

of ordinary skill in the art would be motivated to do this reduce undesirable overhead to enhance bandwidth utilization. See column 5, lines 28-38.

Regarding claim 12, the claimed inbound tunnel packet payload arrives at switch encapsulated in a tunnel packet having a tunnel packet header that identifies the tunnel packet with an inbound multiplex, the multiplex terminator stripping the tunnel packet header and providing an indication of tunnel packet's inbound multiplex to context matcher is disclosed by receiving RTP payload at intermediate node, performing mini packet switching at mini-packet controller (Figure 4, element 410) in intermediate node (Figure 4, element 430) where mini-packets are disassembled and processed and each packet is grouped with other packets that share the same outgoing UDP connection. RTP payload assembly is carried out at the mini-packet controller and transmitted to next hops, which may be the destination node. See column 6, lines 46-59. The demultiplexing unit Figure 5, element 510) at RNC (element 530) receives RTP payload and disassembles mini packets encapsulated within payload. The control and signaling (element 514) and routing (element 516) modules examine header of mini packet and extracts next hop information and multiplexing unit (element 512) will assemble mini packets destined for the same hop together. See column 7, lines 3-15.

Regarding claims 15-16, the claimed timer in communication with multiplexer, the multiplexer using the timer to dispatch an outbound tunnel packet payload when the first tunneled datagram to be assigned to a payload has been delayed by a maximum desired delay or desired payload size has been reached is disclosed by timers (element

540) associated with multiplexing unit (element 512) can be used to obtain a tradeoff between bandwidth efficiency and delay. See column 7, lines 15-19.

Regarding claims 17-18, the claimed context matcher having capability to construct a switching context for an incoming non-tunneled datagram and associate the incoming non-tunneled datagram with that switching context, the forwarding engine having capability to map associated non-tunneled datagram to an outbound multiplex is disclosed by assembly of mini packets into a single RDP/UDP/IP payload (Figure 3, element 300) where the mini packets (element 310) follow the RTP header and each mini packet (element 320) is delineated by a two byte MINI-IP header (element 312). See column 3, lines 26-40, column 6, lines 32-67. This MINI-IP header allows for many users to share a single RTP/UDP/IP connection and includes a CID field, LI field and SN field. Allocating a unique CID identifies a single user, among the number of users. See column 5, lines 5-25, lines 30-64. Mini packets are assembled into RTP payload with other mini packets that are destined for same next hop. See column 7, lines 1-43.

RTP payload is received at intermediate node, mini packet switching is performed at mini-packet controller (Figure 4, element 410) in intermediate node (Figure 4, element 430) where mini-packets are disassembled and processed and each packet is grouped with other packets that share the same outgoing UDP connection. RTP payload assembly is carried out at the mini-packet controller and transmitted to next hops, which may be the destination node. See column 6, lines 46-59. The demultiplexing unit Figure 5, element 510) at RNC (element 530) receives RTP payload and disassembling mini packets encapsulated within payload. The control and signaling

(element 514) and routing (element 516) modules examine header of mini packet and extracts next hop information and multiplexing unit (element 512) will assemble mini packets destined for the same hop together. See column 7, lines 3-15.

Regarding claims 23-24, Subbiah discloses all of the limitations of the claims except for layer 2 tunneling protocol. Westberg discloses compression of packets with use of AAL2 minicell header. See Figure 9, and columns 5-8. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify mini packet switching system of Subbiah et al. with AAL2 minicells of Westberg. One of ordinary skill in the art would be motivated to do this for enhance bandwidth utilization. See column 5, lines 28-32.

Allowable Subject Matter

3. Claims 5-6, 14 are allowable over prior art.

Regarding claims 5-6, the prior art of record does not disclose, in single or in combination, resetting switching context to a new voice data stream by sending a datagram for that switching context with an uncompressed header.

Regarding claim 14, the prior art of record does not disclose, in single or in combination, the forwarding engine having capability to reroute tunneled datagrams associated with a given switching context by changing a field in the switching context from one outbound multiplex identifier to another.

Response to Arguments

4. Applicant's arguments filed 10/3/2005 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made with Subbiah in view of Westberg.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
1/6/2005

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